

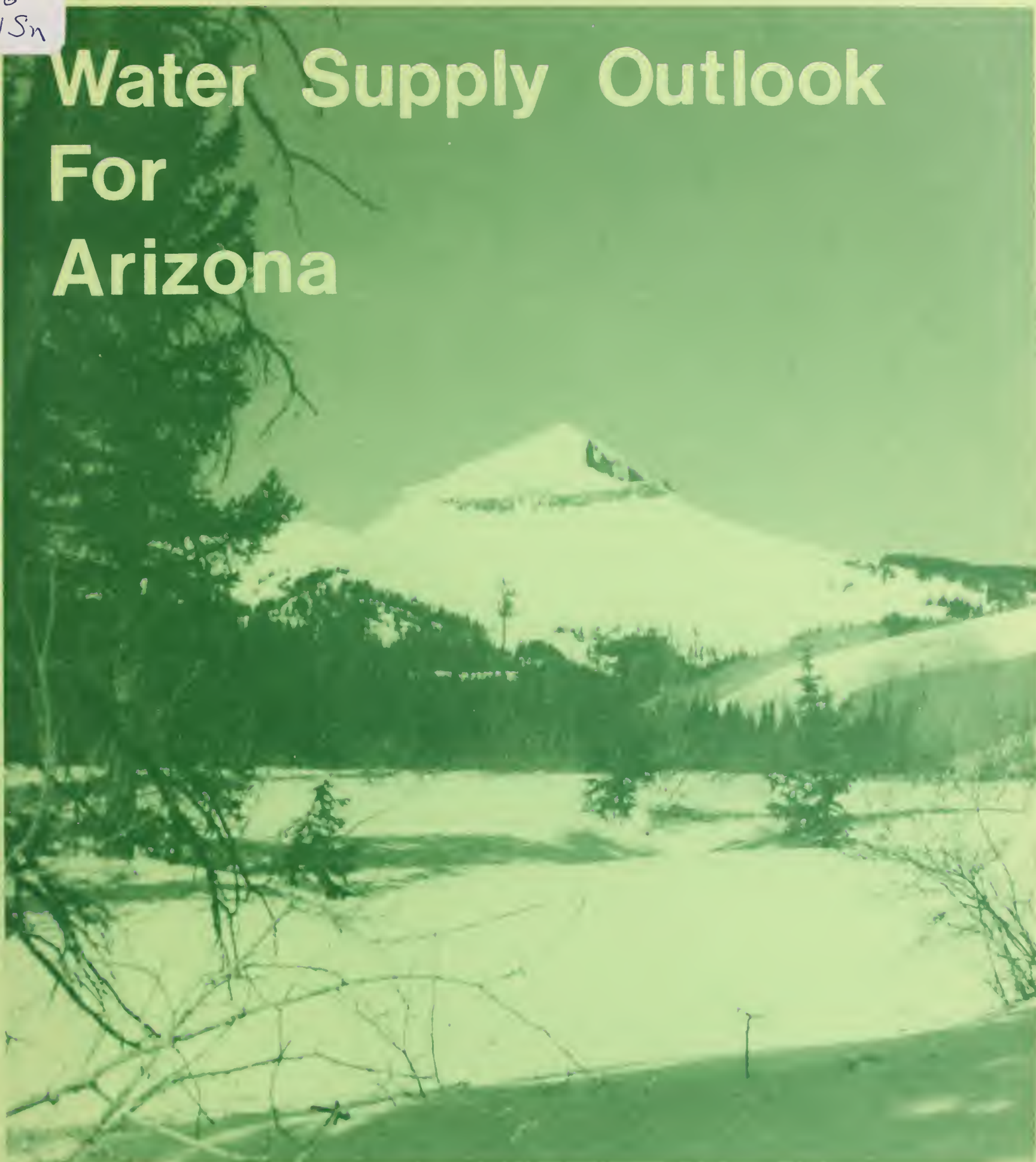
## **Historic, Archive Document**

Do not assume content reflects current scientific knowledge, policies, or practices.



Reserve  
1.96  
R31Sn

# Water Supply Outlook For Arizona



SOIL CONSERVATION SERVICE  
U.S. DEPARTMENT OF AGRICULTURE

Cooperating with

SALT RIVER VALLEY WATER USERS ASSOCIATION  
AND  
ARIZONA DEPARTMENT OF WATER RESOURCES

||||||| AS OF |||||  
**JAN. 1, 1982**  
|||||||



## TO RECIPIENTS OF WATER SUPPLY OUTLOOK REPORTS:

Most of the usable water in western states originates as mountain snowfall. This snowfall accumulates during the winter and spring, several months before the snow melts and appears as streamflow. Since the runoff from precipitation as snow is delayed, estimates of snowmelt runoff can be made well in advance of its occurrence. Streamflow forecasts published in this report are based principally on measurement of the water equivalent of the mountain snowpack.

Forecasts become more accurate as more of the data affecting runoff are measured. All forecasts assume that climatic factors during the remainder of the snow accumulation and melt season will interact with a resultant average effect on runoff. Early season forecasts are therefore subject to a greater change than those made on later dates.

The snow course measurement is obtained by sampling snow depth and water equivalent at surveyed and marked locations in mountain areas. A total of about ten samples are taken at each location. The average of these are reported as snow depth and water equivalent. These measurements are repeated in the same location near the same dates each year.

Snow surveys are made monthly or semi-monthly from January 1 through June 1 in most states. There are about 1900 snow courses in Western United States and in the Columbia Basin in British Columbia. Networks of automatic snow water equivalent and related data sensing devices, along with radio telemetry are expanding and will provide a continuous record of snow water and other parameters at key locations.

Detailed data on snow course and soil moisture measurements are presented in state and local reports. Other data on reservoir storage, summaries of precipitation, current streamflow, and soil moisture conditions at valley elevations are also included. The report for Western United States presents a broad picture of water supply outlook conditions, including selected streamflow forecasts, summary of snow accumulation to date, and storage in larger reservoirs.

Snow survey and soil moisture data for the period of record are published by the Soil Conservation Service by states about every five years. Data for the current year is summarized in a West-wide basic data summary and published about October 1 of each year.

*Cover Photo: "Lone cone, near Norwood, Colorado,  
Blanketed by its winter mantle of snow."*

### PUBLISHED BY SOIL CONSERVATION SERVICE

The Soil Conservation Service publishes reports following the principal snow survey dates from January 1 through June 1 in cooperation with state water administrators, agricultural experiment stations and others. Copies of the reports for Western United States and all state reports may be obtained from Soil Conservation Service, West Technical Service Center, Room 111, 511 N.W. Broadway, Portland, Oregon 97209.

Copies of state and local reports may also be obtained from state offices of the Soil Conservation Service in the following states:

STATE	ADDRESS
Alaska	204 E. 5th. Ave., Room 217, Anchorage, Alaska 99501
Arizona	6029 Federal Building, Phoenix, Arizona 85025
Colorado (N. Mex.)	P. O. Box 17107, Denver, Colorado 80217
Idaho	Room 345, 304 N. 8th. St., Boise, Idaho 83702
Montana	P. O. Box 98, Bozeman, Montana 59715
Nevada	P. O. Box 4850, Reno Nevada 89505
Oregon	1220 S.W. Third Ave., Portland, Oregon 97204
Utah	P.O. Box 11350, Salt Lake City, Utah 84147
Washington	360 U.S. Court House, Spokane, Washington 99201
Wyoming	P. O. Box 2440, Casper, Wyoming 82601

### PUBLISHED BY OTHER AGENCIES

Water Supply Outlook reports prepared by other agencies include a report for California by the Snow Surveys Branch, California Department of Water Resources, P.O. Box 388, Sacramento, California 95802 --- for British Columbia by the Ministry of the Environment, Water Investigations Branch, Parliament Buildings, Victoria, British Columbia V8V 1X5 --- for Yukon Territory by the Department of Indian and Northern Affairs, Northern Operations Branch, 200 Range Road, Whitehorse, Yukon Territory Y1A 3V1 --- and for Alberta, Saskatchewan, and N.W.T. by the Water Survey of Canada, Inland Waters Branch, 110-12 Avenue S.W, Calgary, Alberta T3C 1A6.



# ***WATER SUPPLY OUTLOOK*** ***FOR*** ***ARIZONA***

**and**  
**FEDERAL-STATE-PRIVATE COOPERATIVE SNOW SURVEYS**

*Issued by*

**NORMAN A. BERG**  
**CHIEF**  
**SOIL CONSERVATION SERVICE**  
**WASHINGTON, D.C**

---

---

*Released by*

**VERNE M. BATHURST**  
**STATE CONSERVATIONIST**  
**SOIL CONSERVATION SERVICE**  
**PHOENIX, ARIZONA**

*In Cooperation with*

**WESLEY E. STEINER**  
**DIRECTOR**  
**ARIZONA DEPARTMENT OF**  
**WATER RESOURCES**

**KARL F. ABEL**  
**PRESIDENT**  
**SALT RIVER VALLEY WATER**  
**USERS ASSOCIATION**

---

---

*Report prepared by*

**RONALD A. JONES**  
**SNOW SURVEY SUPERVISOR**  
**SOIL CONSERVATION SERVICE**  
**ROOM 3008 FEDERAL BUILDING**  
**PHOENIX, ARIZONA 85025**





CONDITIONS IN ARIZONA AS OF THE END OF DECEMBER INDICATED THAT MUCH BELOW AVERAGE SURFACE WATER SUPPLIES COULD BE EXPECTED IN 1982. STORMS WHICH HAVE ENTERED THE STATE SINCE JANUARY 1 ARE IMPROVING THE SITUATION.

### WATER SUPPLY

Streamflow forecasts based on snowpack and precipitation data as of December 30, 1981 are for much below average discharges on all major streams in Arizona except the Colorado River. Forecasts for January-May streamflow as a percent of average are: Salt River, 41%; Verde River, 38%; Tonto Creek, 35%; Gila River, 29%, San Francisco River, 33%; and the upper Little Colorado River, 40%. The series of storms which have entered the state since January 1, 1982, are changing this outlook. Updated forecasts will be made following snow surveys to be conducted near January 15, 1982.

### SNOW COVER

Snow cover at the time surveys were conducted on December 29 and 30, 1981 was very shallow and discontinuous. Most snow courses were bare throughout the state. Reference snow courses indicated the following percents of normal snowpack: Salt River, 9%; Verde River, 30%; Gila River, 11%; and upper Little Colorado River, 26%. The storms since January 1, 1982, have deposited snow on the higher elevation watersheds. A report of snow water increases and precipitation as recorded by the Snotel system between December 30 and January 4 is included in the report. All indications are that a good snowpack will now develop this winter.

### PRECIPITATION

Precipitation from October 1 to December 30, 1981 was concentrated primarily in two major storms, one on October 1-2 and the other November 25-30. The November storm produced several feet of snow on the watersheds, but almost all of this had disappeared by December 30. December had practically no precipitation.

Snotel sites have recorded precipitation ranging from 1.5 inches at Frisco Divide near Alpine to 4.4 inches at Workman Creek and Heber between December 30 and January 4. The storm systems now in progress are bringing much needed moisture to the watersheds.

### STREAMFLOW

Streamflow has been below normal on major rivers. Representative streamflow for November and December, 1981 is shown in this table.

<u>Stream</u>	<u>Flow-% of Average</u>	
	Nov.	Dec.
Salt River	57%	28%
Verde River	63%	34%
Gila River at Solomon	57%	30%
Gila River at Virden	51%	37%
San Francisco at Clifton	56%	16%





Streamflow volumes should increase in response to the January storm systems passing through Arizona and New Mexico.

### RESERVOIR STORAGE

Four major reservoirs on the Colorado River have a combined storage of 44,917,900 acre-feet. This is 84% of capacity and 135% of normal for January 1.

Salt River Project reservoirs have a combined storage of 1,116,000 acre-feet which is 55% of capacity and near normal for January 1. San Carlos Reservoir is holding 243,000 acre-feet. This is 26% of capacity and 112% of average for this date.

Lake Pleasant contains 58,300 acre-feet, 37% of capacity and 84% of normal. No shortages are expected for users drawing water from these sources.



**ABOUT JANUARY  
STREAMFLOW FORECASTS  
1, 1982**

STREAMFLOW FORECASTS		1, 1982		THIS YEAR		PAST RECORD	
BASIN, STREAM and/or FORECAST POINT		FORECAST		FORECAST PERIOD	THOUSAND ACRE FEET		
		Thousand Acre Feet	Percent of Average		Last Year	Average †	
<u>SALT RIVER DRAINAGE</u>							
Salt near Roosevelt	140	41	Jan-May	171.4	345.0		
"	17	40	January	15.2	42.8		
Tonto Creek near Roosevelt	19.1	35	Jan-May	14.2	54.9		
"	4.3	3.4	January	1.6	12.5		
Verde River above Horseshoe	85	3.8	Jan-May	100.2	223.9		
"	15	3.8	January	20.3	39.9		
Total Salt River Project Streams	244.1	39	Jan-May	285.8	623.8		
"	36.3	38	January	37.1	95.2		
<u>GILA RIVER DRAINAGE</u>							
Gila River at Calva	27	23	Jan-May	18.3	118.5		
Gila River near Gila	25	42	Jan-May	19.3	60.1		
Gila River near Solomon	45	29	Jan-May	46.5	155.9		
"	7.8	30	January	10.3	25.9		
Gila River near Virden	23	29	Jan-May	18.1	78.7		
Frisco River at Clifton	25	33	Jan-May	24.4	75.1		
Frisco River at Glenwood	10	29	Jan-May	9.0	33.9		
<u>LITTLE COLORADO RIVER DRAINAGE</u>							
Little Colo. River above Lyman Dam	4.1	35	Jan-June	3.4	11.7		
Greer	3.6	45	Jan-June	5.4	8.0		
<u>GRANITE CREEK DRAINAGE</u>							
Granite Creek	2.1	---	Jan-May	---	---		
Willow Creek	1.8	---	Jan-May	---	---		
<u>MIMBRES RIVER DRAINAGE</u>							
Mimbres River near Mimbres	2.0	---	Jan-May	1.0	---		
<u>COLORADO RIVER DRAINAGE</u>							
Virgin River near Littlefield	34	71	Apr-June	32.8	47.9		
Lake Mary Inflow	1.5	---	Jan-May	---	---		
† Based on 15-year period, 1963-77							
* Average for less than 15 years							



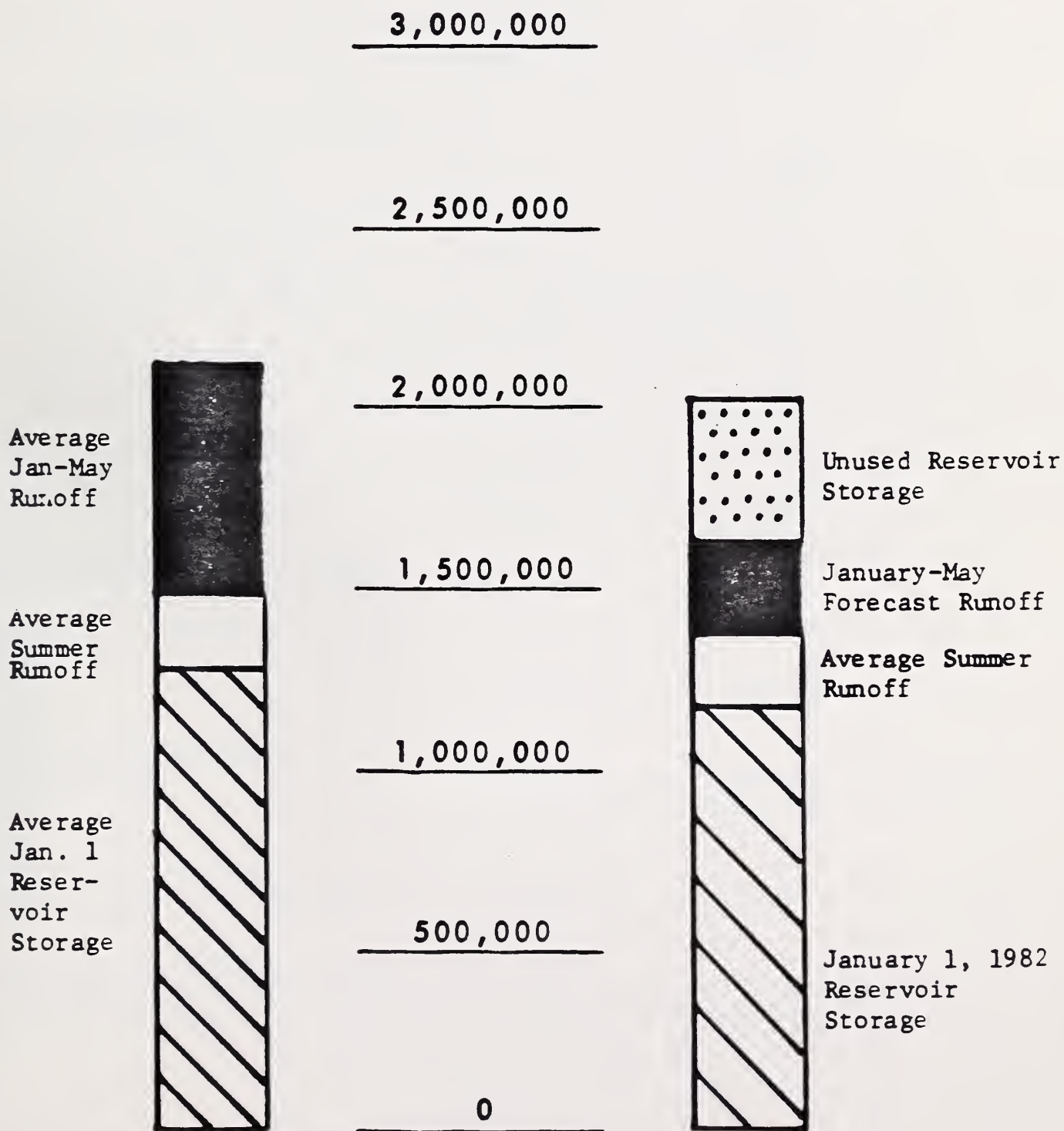


# WATER SUPPLY INVENTORY SALT RIVER VALLEY SYSTEM

IN ACRE-FEET

AVERAGE WATER SUPPLY  
ON JANUARY 1

ANTICIPATED WATER SUPPLY  
January 1, 1982



Based on Present Storage + Forecast Spring Runoff + Average Summer Runoff



ABOUT JANUARY  
1, 1982

**STREAMFLOW FORECASTS**

STREAMFLOW FORECASTS		1, 1982		THIS YEAR		PAST RECORD	
BASIN, STREAM and/or FORECAST POINT		FORECAST		FORECAST PERIOD	THOUSAND ACRE FEET		
		Thousand Acre Feet	Percent of Average		Last Year	Average †	
<u>SALT RIVER DRAINAGE</u>							
Salt near Roosevelt	140	41	Jan-May	171.4	345.0		
"	17	40	January	15.2	42.8		
Tonto Creek near Roosevelt	19.1	35	Jan-May	14.2	54.9		
"	4.3	3.4	January	1.6	12.5		
Verde River above Horseshoe	85	3.8	Jan-May	100.2	223.9		
"	15	3.8	January	20.3	39.9		
Total Salt River Project Streams	244.1	39	Jan-May	285.8	623.8		
"	36.3	38	January	37.1	95.2		
<u>GILA RIVER DRAINAGE</u>							
Gila River at Calva	27	23	Jan-May	18.3	118.5		
Gila River near Gila	25	42	Jan-May	19.3	60.1		
Gila River near Solomon	45	29	Jan-May	46.5	155.9		
"	7.8	30	January	10.3	25.9		
Gila River near Virden	23	29	Jan-May	18.1	78.7		
Frisco River at Clifton	25	33	Jan-May	24.4	75.1		
Frisco River at Glenwood	10	29	Jan-May	9.0	33.9		
<u>LITTLE COLORADO RIVER DRAINAGE</u>							
Little Colo. River above Lyman Dam	4.1	35	Jan-June	3.4	11.7		
Greer	3.6	45	Jan-June	5.4	8.0		
<u>GRANITE CREEK DRAINAGE</u>							
Granite Creek	2.1	---	Jan-May	---	---		
Willow Creek	1.8	---	Jan-May	---	---		
<u>MIMBRES RIVER DRAINAGE</u>							
Mimbres River near Mimbres	2.0	---	Jan-May	1.0	---		
<u>COLORADO RIVER DRAINAGE</u>							
Virgin River near Littlefield	34	71	Apr-June	32.8	47.9		
Lake Mary Inflow	1.5	---	Jan-May	---	---		
† Based on 15-year period, 1963-77							
* Average for less than 15 years							





## RESERVOIR STORAGE (Thousand Acre Feet) JANUARY 1, 1982

BASIN or STREAM	RESERVOIR	Usable Capacity	Usable Storage		
			This Year	Last Year	Average†
<u>GILA RIVER DRAINAGE</u>					
Agua Fria	Lake Pleasant	157.6	58.3	103.5	69.1
Granite	Watson Lake	4.7	2.0	1.4	2.1
Granite	Willow Creek	6.1	0.9	.3	2.5
Gila	San Carlos	935.1	243.0	665.8	216.6
Gila	Painted Rock Dam	2,492	0	0	----
Salt (4)	Roosevelt, Apache, Canyon & Saguaro	1,709	1,033	1,436	1,148
Verde (2)	Bartlett and Horseshoe	309.6	83.0	40.5	94.7
Salt and Verde	6 Salt River Project Reservoirs	2,019	1,116	1,479	1,243
<u>COLORADO RIVER DRAINAGE</u>					
Colorado	Lake Havasu	619.4	536.9	565.9	543.5
Colorado	Lake Mohave	1,810	1,575	1,596	1,593
Colorado	Lake Mead	26,159	22,681	23,006	17,409
Colorado	Lake Powell	25,002	20,125	22,111	11,625*
Little Colorado	Lyman **		NR	23.1	14.3
Little Colorado	Show Low Lake	5.1	NR	0.5	1.5*
† Based on 15-year average, 1963-77					
* Average is for less than 15 years of record.					
** Siltation has reduced the storage capacity of Lyman Reservoir. No storage will be reported until new storage tables are completed.					









# SNOW ABOUT JANUARY 1, 1982

SNOW ABOUT JANUARY 1, 1982		THIS YEAR			PAST RECORD	
DRAINAGE BASIN and/or SNOW COURSE		Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (Inches)	
NAME	Elevation				Last Year	Average †
<b>SALT RIVER</b>						
Baldy *	9220	12/29	4	1.0	1.4	---
BALDY SNOTEL	9220	12/30	---	1.4	2.4	---
Beaver Head	8000	12/30	0	0.0	0.0	---
BONITO ROCK SNOTEL	8270	12/30	---	0.6	---	---
Canyon Creek	7500	12/29	1	0.3	0.0	---
Canyon Point	7600	12/29	1	0.2	0.0	---
Coronado Trail	8400	12/30	0	0.0	0.0	2.2**
CORONADO TRAIL SNOTEL	8400	12/30	---	0.0	0.0	---
Forest Dale	6430	12/30	0	0.0	0.0	1.3**
Ft. Apache	9160	12/29	5	1.4	1.6	4.3**
Hannagan Meadows	9090	12/30	1	0.2	0.7	4.8**
HANNAGAN MEADOWS SNOTEL	8960	12/30	---	0.9	2.4	---
Hawley Lake	8250	12/30	3	0.8	1.0	4.0**
HAWLEY LAKE SNOTEL	8250	12/30	---	1.0	1.3	---
Heber	7640	12/29	1	0.4	0.0	---
HEBER SNOTEL	7640	12/30	---	1.4	0.0	---
Maverick Fork	9050	12/29	0	0.0	0.6	4.6**
MAVERICK FORK SNOTEL	9200	12/30	---	0.0	1.0	---
McNary	7225	12/30	0	0.0	0.2	---
M McNARY SNOTEL	7225	12/30	---	0.0	0.0	---
Milk Ranch	7000	12/30	0	0.0	0.0	---
Mt. Ord (A)	11000	NOT SCHEDULED			---	---
Nutriosio *	8500	12/30	0	0.0	0.0	1.5**
Promontory Butte	7900	12/29	10	3.3	0.2	---
PROMONTORY SNOTEL	7900	NO REPORT			0.5	---
Smith Cienega (A)	9850	NOT SCHEDULED			---	---
Sunrise Summit	10600	12/29	5E	1.5E	1.4	7.0**
Wilson Lake	9000	12/30	8	1.9	2.0	5.0**
Workman Creek	6900	12/30	0E	0.0E	0.0	4.5**
WORKMAN CREEK SNOTEL	6900	12/30	---	0.0	0.0	---
<b>LOWER COLORADO RIVER</b>						
Bill Williams Intermediate	8550	12/29	8	2.0	---	---
Bill Williams Summit	8950	12/29	12	2.4	---	---
Chalender *	7100	12/30	4	1.2	0.0	1.8**
Fort Valley	7350	12/30	0	0.0	0.0	1.2**
Grand Canyon	7500	LATE			---	---
Williams Ski Run	7720	12/29	10	2.5	---	---

+ 1963-77 15-year period. (\*) Adjacent drainage. (\*\*) 1963-77 Adjusted Average. (A) Aerial observation: water content estimated. Snotel data is edited. (E) Estimated.

† 1963-77 15-year period. (\*) Adjacent drainage. (\*\*) 1963-77 Adjusted Average. (A) Aerial observation: water content estimated. Snotel data is edited. (E) Estimated.



# SNOW ABOUT JANUARY 1, 1982

SNOW ABOUT JANUARY 1, 1982		THIS YEAR			PAST RECORD	
DRAINAGE BASIN and/or SNOW COURSE		Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (Inches)	
NAME	Elevation				Last Year	Average †
GILA RIVER						
Bear Wallow	8100	12/30	0	0.0	---	---
Beaver Head	8000	12/30	0	0.0	0.0	---
Coronado Trail	8400	12/30	0	0.0	0.0	2.2**
CORONADO TRAIL SNOTEL	8400	12/30	---	0.0	0.0	---
Emory Pass #1 *	7800	DISCONTINUED			0.0	---
Emory Pass #2 *	7800	12/30	0	0.0	0.0	---
Frisco Divide	8000	12/30	0	0.0	0.0	---
FRISCO DIVIDE SNOTEL	8000	12/30	---	0.0	0.0	---
Hannagan Meadows *	9090	12/30	1	0.2	0.7	4.8**
HANNAGAN MEADOWS SNOTEL	8960	12/30	---	0.9	2.4	---
Hummingbird (A)	10550	12/30	---	0.5	0.0	---
LOOKOUT MOUNTAIN SNOTEL	8150	12/30	---	0.0	---	---
McKnight Cabin * (A)	9300	12/30	---	0.5	0.0	---
Mogollon	7000	NO REPORT			0.0	---
Nutrioso	8500	12/30	0	0.0	0.0	1.5**
Redstone Trail	8600	NO REPORT			0.0	4.6**
Rose Canyon	7300	12/30	0	0.0	---	---
SIGNAL PEAK SNOTEL	8360	12/30	---	0.9	0.0	---
Silver Creek Divide	9070	NO REPORT			0.8	---
SILVER CREEK SNOTEL	9070	12/30	---	1.8	0.3	---
State Line	8000	12/30	0	0.0	0.0	2.0**
Whitewater (A)	10750	12/30	18	4.0	4.5	---
VERDE RIVER						
Baker Butte	7330	12/29	2	0.9	0.0	---
BAKER BUTTE SNOTEL	7330	12/30	---	1.1	0.0	---
Baker Butte #2	7700	12/29	13	4.5	0.2	---
Camp Wood	5700	12/30	0	0.0	0.0	---
Chalender *	7100	12/30	4	1.2	0.0	1.8**
Copper Basin Divide	6720	12/30	0	0.0	---	---
Fort Valley	7350	12/30	0	0.0	0.0	1.2**
FRY SNOTEL	7200	12/30	---	0.0	0.0	---
Gaddes Canyon	7600	12/29	6	1.4	0.0	---
Happy Jack	7630	12/30	0	0.0	0.0	2.7**
Iron Springs *	6200	12/30	0	0.0	---	---
Mingus Mountain	7100	12/29	0	0.0	0.0	---
Mormon Lake *	7350	12/30	1	0.3	---	3.0**
Mormon Mountain	7500	12/30	2	0.6	0.0	3.6**
MORMON MOUNTAIN SNOTEL	7500	12/30	---	0.0	0.0	---
Mormon Mtn. Summit #2	8470	NOT SCHEDULED			0.0	---
Newman Park	6750	12/30	0	0.0	0.0	---
Snow Bowl #1	10260	12/30	16	3.8	0.9	---
Snow Bowl #2	11000	12/30	10	2.1	3.0	---
SUGAR LOAF SNOTEL	6120	12/30	---	0.0	0.0	---
White Horse Lake Jct.	7180	12/30	3	0.5	0.0	2.0**
WHITE HORSE LAKE JCT. SNOTEL	7180	12/30	---	0.0	0.0	---
White Spar	6000	12/30	0	0.0	---	---
+ 1963-77 15-year period. (*) Adjacent drainage. (**) 1963-77 Adjusted Average. (A) Aerial observation: water content estimated. Snotel data is edited.						

† 1963-77 15-year period. (\*) Adjacent drainage. (\*\*) 1963-77 Adjusted Average. (A) Aerial observation: water content estimated. Snotel data is edited.





# SNOW ABOUT JANUARY 1, 1982

SNOW ABOUT JANUARY 1, 1982		THIS YEAR			PAST RECORD	
DRAINAGE BASIN and/or SNOW COURSE		Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (Inches)	
NAME	Elevation				Last Year	Average †
<u>LITTLE COLORADO RIVER</u>						
Baldy	9220	12/29	4	1.0	1.4	---
BALDY SNOTEL	9220	12/30	---	1.4	2.4	---
Canyon Creek	7500	12/29	1	0.3	0.0	---
Canyon Point	7600	12/29	1	0.2	0.0	---
Cheese Springs	8600	12/30	5	0.8	1.4	---
Forest Dale	6430	12/30	0	0.0	0.0	1.3**
Ft. Apache	9160	12/29	5	1.4	1.6	4.3**
Fort Valley	7350	12/30	0	0.0	0.0	1.2**
Happy Jack	7630	12/30	0	0.0	0.0	2.7**
Heber	7640	12/29	1	0.4	0.0	---
HEBER SNOTEL	7640	12/30	---	1.4	0.0	---
Lake Mary	6970	12/30	1	0.3	0.0	---
McNary	7225	12/30	0	0.0	0.2	---
MCNARY SNOTEL	7225	12/30	---	0.0	0.0	---
Mormon Lake	7350	12/30	1	0.3	0.0	3.0**
Mormon Mountain	7500	12/30	2	0.6	0.0	3.6**
MORMON MOUNTAIN SNOTEL	7500	12/30	---	0.0	0.0	---
Mormon Mtn. Summit #2	8470	NOT SCHEDULED			0.0	---
Nutriso *	8500	12/30	0	0.0	0.0	1.5**
Promontory Butte	7900	12/29	10	0.3	0.2	---
PROMONTORY SNOTEL	7900	NO REPORT			0.5	---
Snow Bowl #1	10260	12/30	16	3.8	0.9	---
Snow Bowl #2	11000	12/30	10	2.1	3.0	---
Wilson Lake	9000	12/30	8	1.9	2.0	5.0**

+ 1963-77 15-year period. (\*) Adjacent drainage. (\*\*) 1963-77 Adjusted Average. (A) Aerial observation: water content estimated. Snotel data is edited.

+ 1963-77 15-year period. (\*) Adjacent drainage. (\*\*) 1963-77 Adjusted Average. (A) Aerial observation: water content estimated. Snotel data is edited.



## PRECIPITATION (Inches) ABOUT JANUARY 1, 1982

DRAINAGE BASIN and PRECIPITATION GAGE LOCATION	ELEVATION	CURRENT INFORMATION			FROM APPROX NOV 1 TO DATE		
		Date of Reading	Month's Precipitation	Average †	This Year	Average †	Percent of Average
<u>GILA RIVER</u>							
Silver Creek Divide	9000	N.R.	---	4.50	---	6.19	---
Hannagan Meadows **	9030	12/30	0.08	3.46	1.40	5.06	28
Frisco Divide **	8000	12/30	0.05	1.60*	0.80	2.30*	35
<u>SALT RIVER</u>							
Canyon Point	7600	12/29	0.00	4.63*	3.96	7.17*	55
Hannagan Meadows **	9030	12/30	0.08	3.46	1.40	5.06	28
Little Wildcat (Heber Snow Course)	7600	12/29	0.00	4.09	3.81	6.37	60
Maverick Fork	9050	12/29	0.00	3.29	1.50	5.33	28
Workman Creek **	6970	N.R.	---	4.09	---	6.88	---
Wilson Lake	9100	12/30	0.00	3.07	1.30	5.02	26
<u>VERDE RIVER</u>							
Baker Butte	7300	12/29	0.00	4.54	4.65	6.82	68
Copper Basin Divide	6720	12/30	0.00	3.06	4.15	5.05	82
Fort Valley **	7350	12/30	0.23	2.31	2.16	3.78	57
Happy Jack **	7480	12/30	0.01	3.09	2.92	4.89	60
Mingus Mountain	7660	12/29	0.08	1.76	3.58	3.67	98
Mormon Mountain	7500	12/30	0.00	4.67	2.50	7.55	33
White Horse Lake Jct.**	7150	12/30	0.00	3.00	3.70	4.90	76
<u>LITTLE COLORADO</u>							
Greer Lakes	8500	12/29	0.10	1.90	0.70	2.98	23
Little Wildcat (Heber Snow Course)	7600	12/29	0.00	4.09	3.81	6.37	60
Sheep Crossing (Baldy Snow Course)	9125	12/29	0.20	3.05	1.60	4.91	33
1963-77 Average							
* Adjusted Average							
** Data Supplied by U.S. Forest Service							



# PRECIPITATION (Inches) ABOUT JANUARY 1, 1982 (SNOTEL SITES)

DRAINAGE BASIN and PRECIPITATION GAGE LOCATION	ELEVATION	CURRENT INFORMATION			FROM APPROX NOV 1 TO DATE		
		Date of Reading	Month's Precipitation	Average †	This Year	Average †	Percent of Average
<u>GILA RIVER</u>							
Coronado Trail	8400	12/30	0.0	---	1.1	---	---
Hannagan Meadows	8960	12/30	0.0	↓	1.3	↓	↓
Frisco Divide	8000	12/30	0.0		0.9		
Silver Creek Divide	9000	12/30	0.3		2.1		
Lookout Mountain	8150	12/30	0.3		1.3		
Signal Peak	8360	12/30	0.1		2.8		
<u>SALT RIVER</u>							
Promontory	7930	N.R.	---	↓	---	↓	↓
Heber	7640	12/30	0.0		3.9		
Hawley Lake	8250	12/30	0.2		2.5		
McNary	7200	12/30	0.0		2.1		
Bonito Rock	8270	12/30	0.0		2.0		
Hannagan Meadows	8960	12/30	0.0		1.3		
Maverick Fork	9050	12/30	0.0		1.5		
Coronado Trail	8400	12/30	0.0		1.1		
Workman Creek	6900	12/30	0.3		6.4		
<u>VERDE RIVER</u>							
White Horse Lake	7180	12/30	0.0	↓	3.9	↓	↓
Fry	7200	12/30	0.2		3.6		
Mormon Mountain	7500	12/30	0.1		2.6		
Sugar Loaf	6120	12/30	0.0		2.7		
Baker Butte	7300	12/30	0.0		5.0		
<u>LITTLE COLORADO</u>							
Baldy	9125	12/30	0.3	↓	1.7	↓	↓
McNary	7200	12/30	0.0		2.1		
Heber	7640	12/30	0.0		3.9		
Promontory	7930	N.R.	---		---		
Snotel data edited.							





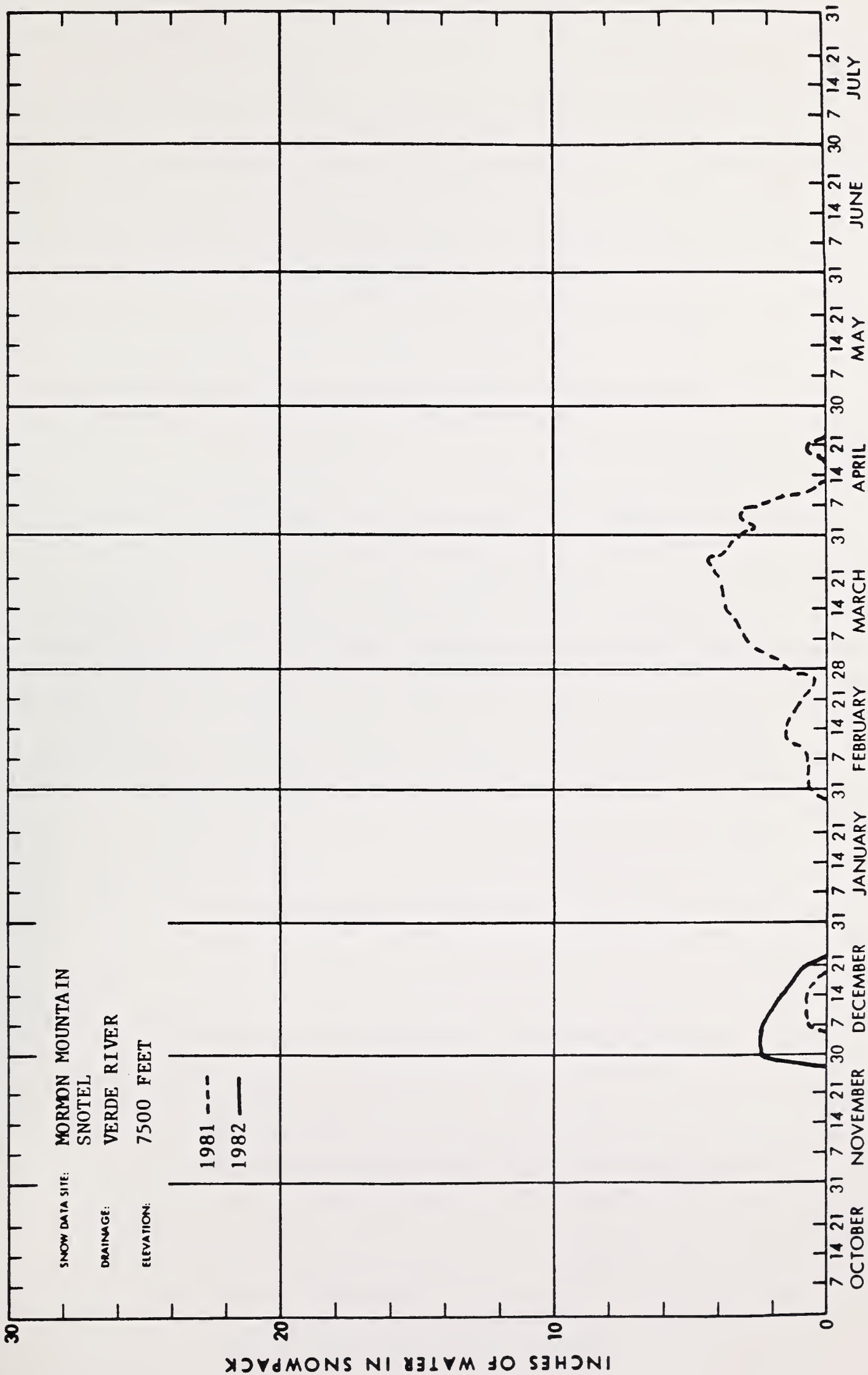
# SUPPLEMENTARY DATA - SNOTEL

STORM OF  
JANUARY 1-3, 1982

<u>SNOTEL SITE</u>	<u>SNOW WATER EQUIVALENT</u>		<u>PRECIPITATION</u>
	<u>12/30/81</u>	<u>1/4/82</u>	<u>12/30/81 to 1/4/82</u>
Baker Butte	1.1	3.7	2.7
Baldy	1.4	3.3	2.5
Bonita Rock	0.6	2.9	3.6
Coronado Trail	0.0	1.4	2.2
Frisco Divide	0.0	1.3	1.5
Fry	0.0	2.6	2.2
Hammagan Meadows	0.9	3.8	3.4
Hawley Lake	1.0	4.1	3.6
Heber	1.4	4.9	4.4
Lookout Mountain	0.0	1.7	1.8
Maverick Fork	0.0	1.4	3.5
McNary	0.0	1.5	2.4
Mormon Mountain	0.0	3.4	3.9
Promontory	---	---	---
Signal Peak	0.9	4.1	2.8
Silver Creek Divide	1.8	3.2	1.6
Sugar Loaf	0.0	1.0	2.2
White Horse Lake	0.0	4.2	2.2
Workman Creek	0.0	4.6	4.4



+

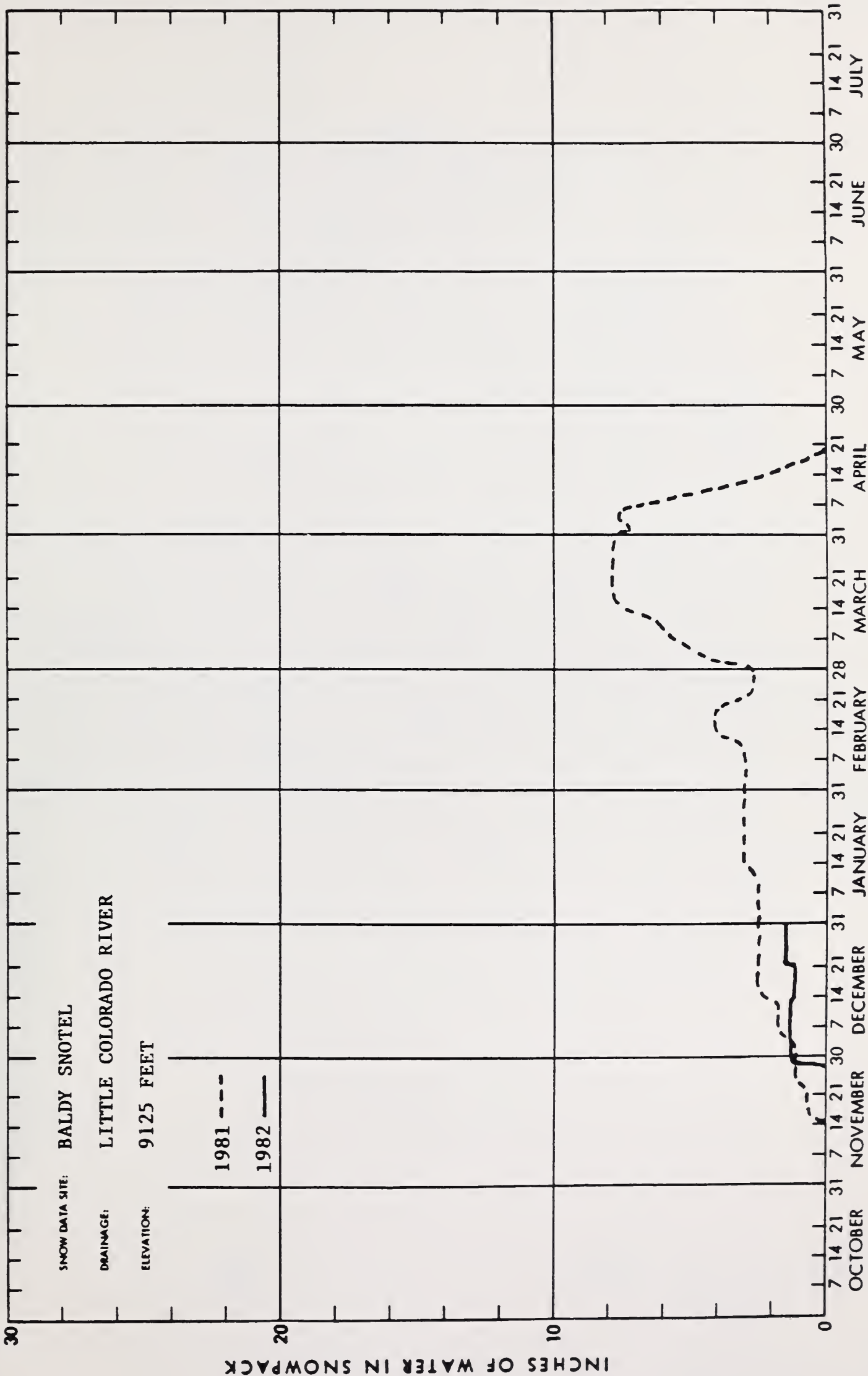


x

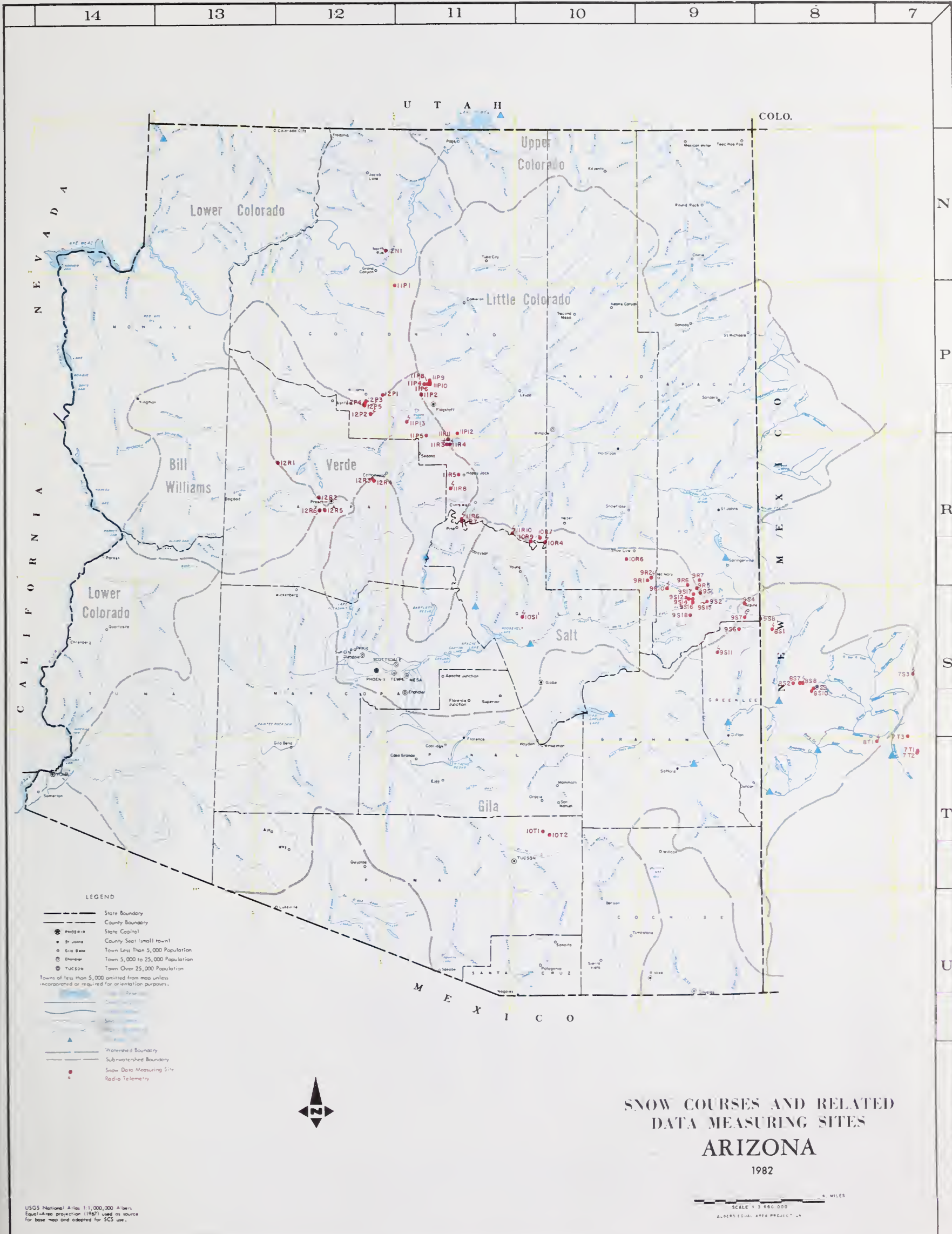




+







- LEGEND
- State Boundary
  - County Boundary
  - State Capital
  - County Seat (small town)
  - Town Less Than 5,000 Population
  - Town 5,000 to 25,000 Population
  - Town Over 25,000 Population
  - Towns of less than 5,000 omitted from map unless incorporated or required for orientation purposes.
  - Range
  - County Seat
  - Watershed Boundary
  - Subwatershed Boundary
  - Snow Data Measuring Site
  - Radio Telemetry

SNOW COURSES AND RELATED  
DATA MEASURING SITES  
ARIZONA  
1982

USGS National Atlas 1:1,000,000 Albers  
Equal-Area projection (1967) used as source  
for base map and adapted for SCS use.

SCALE 1:3,600,000  
ALBERS EQUAL AREA PROJECTION



# INDEX TO SNOW COURSES

NUMBER	NAME	SEC.	TWP.	RGE.	ELEV.	DRAINAGE	OBSERVER	RECORD BEGAN
11P10A	Agassiz	32	23N	7E	11200	Little Colorado	SCS-CF*	1968
11R6PSPRT	Baker Butte	4	12N	9E	7300	Verde	SCS	1966
11R7	Baker Butte #2	9	12N	9E	7700	Verde	SCS	1971
9S1APSPRT	Baldy	28	7N	27E	9125	Little Colorado	SCS	1950
9S15	Baldy #2	12	6N	26E	9750	Little Colorado	SCS	1963
9S16	Baldy #3	13	6N	26E	10950	Little Colorado	SCS	1963
10T1	Bear Wallow	6	12S	16E	8100	Gila	FS	1948
9S6	Beaver Head	13	4N	30E	8000	San Francisco	FS	1938
12P5	Bill William Intermediate	17	21N	2E	8550	Cataract	FS	1967
12P4	Bill Williams Summit	17	21N	2E	8950	Verde	FS	1967
9S18PSPRT	Bonito Rock		5N	26E	8270	Salt	SCS	1979
12N1	Bright Angel	34	33N	3E	8400	Bright Angel Creek	NPS	1947
12R1	Camp Wood	3	16N	6W	5700	Verde	FS	1946
10R7	Canyon Creek #2	18	11N	15E	7500	Little Colorado	SCS	1958
10R9P	Canyon Point	28	11N	14E	7600	Salt	SCS	1967
12P1	Chalender	27	22N	3E	7100	Verde	FS	1947
9R7	Cheese Springs	28	8N	27E	8600	Little Colorado	SCS	1969
12R6P	Copper Basin Divide	23	13N	3W	6720	Verde	SCS	1963
9S7PSPRT	Coronado Trail	26	5N	30E	8000	San Francisco	FS	1938
7T1	Emory Pass #1	16	16S	9W**	7800	Mimbres	SCS	1967
7T2	Emory Pass #2	16	16S	9W**	7800	Mimbres	SCS	1967
11P13PSPRT	Fry	35	20N	5E	7220	Verde	SCS	1978
10R6	Forest Dale	2	9N	21E	6430	Salt	BIA	1939
9R5	Ft. Apache	18	7N	27E	9160	Little Colorado	SCS	1951
11P2P	Ft. Valley	22	22N	6E	7350	Little Colorado	FS	1947
8S1PSPRT	Frisco Divide	31	6S	20W**	8000	San Francisco	FS	1938
12R4	Gaddes Canyon	11	15N	2E	7600	Verde	SCS	1954
11P1	Grand Canyon	21	30N	4E	7500	Hance Creek	NPS	1947
9S11PSPRT	Hannagan Meadows	19	3N	29E	9090	San Francisco	FS	1964
11R5P	Happy Jack	30	16N	9E	7630	Verde	FS	1951
9R10PSPRT	Hawley Lake	13	7N	24E	8300	Salt	BIA	1966
10R4PSPRT	Heber	28	11N	15E	7600	Little Colorado	SCS	1950
8S9A	Hummingbird	19	11S	17W**	10550	Gila	SCS	1964
11P9P	Inner Basin #1	28	23N	7E	10000	Little Colorado	SCS-CF*	1967
11P8P	Inner Basin #2	28	23N	7E	9750	Little Colorado	SCS	1967
12R2	Iron Springs	22	14N	3W	6200	Little Colorado	SCS	1946
11P12	Lake Mary	21	19N	9E	6930	Little Colorado	SCS	1975
7S3PSPRT	Lookout Mountain	1	10S	10W	8500	Gila	SCS	1978
9S2APSPRT	Maverick Fork	13	6N	27E	9150	Salt	SCS	1950
7T3A	McKnight Cabin	10	15S	10W**	9300	Mimbres	SCS	1967
9R2PSPRT	McNary	23	8N	23E	7200	Salt	BIA	1939
9R1	Milk Ranch	33	8N	23E	7000	Salt	BIA	1941
12R3	Mingus Mountain	3	15N	2E	7100	Verde	SCS	1947
8S2	Mogollon	2	11S	19W**	7000	San Francisco	SCS	1953
11R4	Mormon Lake	13	18N	8E	7350	Little Colorado	SCS	1947
11R3APSPRT	Mormon Mountain	14	18N	8E	7500	Verde	SCS	1950
11R11	Mormon Mountain Summit #2	2	18N	8E	8470	Little Colorado	SCS	1975
9S12A	Mt. Ord	4	6N	26E	11200	Salt	SRP-SCS	1966
11P5	Newman Park	25	19N	6E	6750	Verde	SCS	1963
9S4	Nutrioso	23	6N	30E	8500	San Francisco	FS	1938
11R10PSPRT	Promontory Butte	5	11N	13E	7930	Little Colorado	SCS	1973
8S7	Redstone Trail	5	11S	18W**	8600	San Francisco	SCS	1961
10T2	Rose Canyon	15	12S	16E	7300	Gila	FS	1948
8T1PSPRT	Signal Peak	13	16S	13W	8360	Gila	SCS	1977
8S8PSPRT	Silver Creek Divide	4	11S	18W**	9000	San Francisco	SCS	1964
9S14A	Smith Cienega	10	6N	26E	10050	Salt	SRP-SCS	1966
11P4	Snow Bowl #1	36	23N	6E	10260	Verde	FS	1961
11P6	Snow Bowl #2	31	23N	7E	11000	Verde	FS	1965
9S8	State Line	6	6S	21W**	8000	San Francisco	FS	1938
9S17	Sunrise Summit	36	7N	26E	10600	Salt	SCS	1972
11R8PSPRT	Sugarloaf	8	8E	14N	6120	Verde	SCS	1978
12P2PSPRT	White Horse Lake Jct.	2	20N	2E	7180	Verde	FS	1967
12R5	White Spar	19	13N	2W	6000	Verde	SCS	1963
8S10A	Whitewater	19	11S	17W**	10750	Gila	SCS	1964
12P3	Williams Ski Run	9	21N	2E	7720	Cataract	FS	1967
9R6P	Wilson Lake	4	7N	26E	9000	Salt	SCS	1966
10S1PSPRT	Workman Creek	33	6N	14E	6900	Salt	FS	1952

A Aerial Snow Depth Marker  
P Precipitation Storage Gage  
R Radio Telemetry (SNOTEL)

SP Snow Pressure Pillow  
T Temperature  
\*\* NM Principal Meridian  
\* City of Flagstaff

# The Following Organizations Cooperate in the Arizona Snow Survey Work

## FEDERAL

- Department of Agriculture
  - Soil Conservation Service
  - Forest Service
    - Apache-Sitgreaves Forest
    - Coconino Forest
    - Coronado Forest
    - Gila Forest
    - Koibab Forest
    - Prescott Forest
    - Rocky Mountain Forest and Range Experiment Station
    - Tonto Forest
- Department of Commerce
  - NOAA, National Weather Service
- Department of Interior
  - Bureau of Reclamation
    - Region 111
  - Geological Survey
    - Arizona District
    - New Mexico District
  - Bureau of Indian Affairs
    - Fort Apache Reservation
    - San Carlos Irrigation Project
  - National Park Service
    - Grand Canyon National Park
- Gila Water Commissioner
  - Safford, Arizona

## STATE

- Arizona Game and Fish Department
- Arizona State Parks Board
- Arizona Department of Water Resources
- University of Arizona
  - Arizona Agricultural Experiment Station
  - Water Resource Research Center
  - Department of Watershed Management

## MUNICIPAL

- City of Flagstaff

## IRRIGATION PROJECTS

- Salt River Valley Water User's Association
  - Phoenix, Arizona
- San Carlos Irrigation and Drainage District
  - Coolidge, Arizona
- Maricopa County Municipal Water Conservation District

## PRIVATE

- Southwest Forest Industries, Inc.
  - McNary, Arizona
- Fort Apache Indian Reservation
  - White Mountain Recreation Enterprises

Other organizations and individuals furnish valuable information for the snow survey reports. Their cooperation is gratefully acknowledged.



UNITED STATES DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE  
FEDERAL BUILDING ROOM 3008  
230 NORTH FIRST AVENUE  
PHOENIX, ARIZONA 85025

OFFICIAL BUSINESS  
PENALTY FOR PRIVATE USE, \$300

POSTAGE AND FEES PAID  
U. S. DEPARTMENT OF  
AGRICULTURE  
AGR-101



FIRST CLASS MAIL

## FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

Furnishes the basic data  
necessary for forecasting  
water supply for irrigation,  
domestic and municipal water  
supply, hydro-electric power  
generation, navigation,  
mining and industry

*"The Conservation of Water begins  
with the Snow Survey"*